

***3E* Energy Solutions**

A Civic Works Venture

3E Energy Solutions is a Civic Works' team dedicated to improving building performance. The project combines Civic Works' construction expertise, workforce development skills, and focus on environmental sustainability. Through 3E, Civic Works is creating "green" jobs and making buildings more energy efficient.

The mission of 3E Energy Solutions is to:

- Provide green home improvement services that make homes safer, more comfortable, and more energy efficient
- increase the skills of Baltimore's unemployed and underemployed residents through on-the-job "green collar" jobs training
- be self-sustaining by generating income in excess of expense and therefore reducing the project's reliance on grant funding

3E Energy Solutions operates within Civic Works as a team of two interconnected sections: administrative operations and field operations. Administrative operations are lead by the Project Manager. The Project Leader will manage both administrative operations and field operations. The Project Leader directs field operations with the assistance of the Associate Project leader. The field operations staff includes two installers.

3E Energy Solutions retrofits existing residential buildings to improve building performance and increase energy efficiency resulting in homes that are more comfortable to live in, healthier, and more affordable to operate.

Initial service offerings include air sealing, insulation, and cool roof application.

AIR SEALING & INSULATION:

The building envelope is the barrier that separates the conditioned space (where we live) from the unconditioned outdoor environment. Breaks in the building envelope result in unwanted air infiltration and heat transfer. According to the Department of Energy, "air infiltration can account for 30 percent or more of a home's heating and cooling costs" (DOE). Unwanted air leaks can cause additional problems in the home including, moisture, noise, dust, and pollutants, as well as routes of entry for pests. Air sealing closes gaps in the building envelope to reduce unwanted air infiltration. A properly sealed building

envelope will result in lower heating and cooling costs as well as a conditioned living environment that is more comfortable and healthier.

3E Energy Solutions utilizes the principles of building science and various diagnostic tools to identify sources of air infiltration. After sources of air infiltration have been identified, the team seals identified leaks using various commercial foams and caulking products. The team installs alternative insulation (blown cellulose or recycled cotton) in wall and attic cavities. The 3E team creates custom solutions to insulate crawl spaces, seal leaky sky lights, and address other unique sources of air infiltration and heat transfer.

Cool Roofs:

Using an innovative and well-tested roofing process, 3E Energy Solutions creates a roof that improves a buildings' energy efficiency and decrease the city's overall heat island effect.

The term "cool roof" refers to roofing material with high solar reflectance, and high thermal emittance. On a hot summer day, traditional roofs may reach temperatures as high as 180 degrees Fahrenheit, while a cool roof will not reach temperatures above 120 degrees (Eva Wong). The smooth, bright white surface reflects solar radiation and releases a large percentage of absorbed heat, reducing heat transfer to the interior of the building and reducing air conditioning demands.

By applying a layered system of acrylic coatings with an imbedded layer of woven synthetic fabric to the existing roof, we repair existing leaks, prevent future leaks (with 10 year warranty) and significantly improve the energy efficiency of the building.



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